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**(54) PRODUCTION OF CRYSTALLINE ZIRCONIA SOL**

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(57) Abstract:

**PURPOSE:** To obtain stable crystalline zirconia sol having minute particle diameter and eliminating secondary aggregation, by heating an aq. suspension contg. zirconium hydroxide at a specified temp. to obtain an aq. suspension contg. crystalline zirconia, by adding acid to this aq. suspension, by evaporating to dryness and by adding the produced solid lump to an aq. solvent.

**CONSTITUTION:** The aq. suspension contg. zirconium hydroxide is heated at  $\geq 80^{\circ}\text{C}$  and kept at the heating condition until the crystallinity of the produced zirconia becomes  $\geq 80\%$ , to obtain the aq. suspension contg. crystalline zirconia. Then, the aq. suspension is added with acid and evaporated to dryness, and then, the obtd. solid lump is added to the aq. solvent. The aq. suspension contg. zirconium hydroxide may contain hydroxide of other element able to form solid soln. with zirconia (Y is the most pref.). As the acid to be added above-mentioned, acetic acid, hydrochloric acid and nitric acid are pref. By the method above-mentioned, crystalline zirconia sol can be produced in industrial mass- production.

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